means of a small thermometer attached to the magnet, the stem of which is parallel to the axis of the bar. In this thermometer, the size of the bulb, its distance from the freezing-point and length of the scale, may be so proportioned to each other, that the second as well as the first term of the temperature coefficient will be represented in the correction.

8. " On the Reproduction of the *Ascaris Mystax*." By Henry Nelson, M.D. Communicated by Allen Thomson, M.D., F.R.S. Received May 22, 1851.

The author commences with a brief anatomical description of the *Ascaris Mystax*, found in the intestinal canal of the Domestic Cat; with more especial reference to the organs of generation in the two sexes. He traces the gradual formation of the semen; originally thrown off as seminal particles by the cæcal extremity of the tubular testicle, the exterior of each solid particle enlarges to constitute a cell, while the interior retains its consistency and forms a nucleus. The cell then acquires a granular protecting envelope, and in this state is introduced into the female. The solution of the protective envelope and the great enlargement of the seminal cell follow, and its nucleus is now seen to present a granular structure. The external granules of the nucleus coalesce to form a membrane, at first exactly resembling a watch-glass in shape, but by the contraction of its margin ultimately forming a curved cæcal tube. This is the true spermatic particle or spermatozoon, and is set free by the rupture of the seminal cell.

The generative apparatus of the female, commencing also in cæcal extremities, is next treated of, and the author draws particular attention to a transparent, narrow contractile portion, the oviduct, intervening between the ovary and uterus, as the part in which the ovule encounters the spermatic particles, and is by them fecundated. The cæcal end of the ovary likewise throws off a solid particle, which enlarging forms a germinal vesicle and spot. As the germinal vesicle travels slowly down the tubular ovary, it acquires a thick granular investment or yolk, secreted by the ovarian walls. The ovules now present a flattened triangular shape, are placed side by side, and form one solid mass. At the commencement of the oviduct however they become detached, separated from each other, and propelled singly along its interior. Here the gelatinous ovule meets the tubular spermatic particles, and is surrounded on all sides by them. They are at first seen to be merely applied against the ovule, but by degrees the margin of the latter presents a rupture, some of the vitelline granules are displaced, and the spermatic particles become imbedded in the substance of the yolk itself.

While the penetration of the spermatic particles is going on, a chorion, secreted by the oviduct, surrounds the ovule, forming a spherical envelope, within which the germinal vesicle, the granular yolk, and the imbedded spermatozoa, are enclosed. The spermatic particles after penetration are seen to swell, become transparent, and ultimately to dissolve. The vitelline granules likewise either disappear altogether, or are transformed into others of a different colour; and, lastly, the germinal vesicle is destroyed.

By tracing the changes of the ovule in unfecundated females of the same species, the author finds the disappearance of the vitelline granules to be dependent upon, while the formation of the chorion is wholly independent of, the influence exerted by the spermatic particles on the ovule.

As soon as the vitelline granules and germinal vesicle have disappeared, the whole interior of the chorion is filled with a clear fluid, in which a few granules and the germinal spot are seen to remain. By swelling up this constitutes the embryonic vesicle and spot. A membrane separates from the interior of the chorion, and contracting on the granules forms a spherical yolk, in the centre of which is the embryonic vesicle. This is the perfect ovum. The subsequent divisions of the embryonic spot, vesicle and yolk are described; the author particularly pointing out the gyrations of the embryonic vesicle immediately after division. As soon as the whole interior of the egg has been filled by the subdivisions of the yolk, the external granules coalesce and form a continuous membrane internal to the chorion, which by gradual depression on one of its sides forms first a fleshy cup, and then, as the membrane of its concavity touches that of its convex surface, acquires the form of a ring. The ring divides at some point of its circumference, the extremities become pointed, and thus the young Ascaris receives its characteristic shape. The author has frequently repeated his observations with a view to their verification, and has employed the camera lucida to render the illustrative figures as accurate as possible.

9. "On Induced and other Magnetic Forces." By Sir W. Snow Harris, F.R.S. &c. Received April 29, 1851.

The question as to identity in the source of those several and mysterious powers of nature by which masses or particles are moved either toward, or from each other, being a question of deep physical interest, the author of this paper has been led to some further investigation of the nature and laws of magnetic force, in the course of which several new facts have presented themselves which he thinks not altogether unworthy of attention.

Magnetic attraction as commonly observed being found to depend on certain impressions made on the attracting bodies usually designated by the general term induction, it appears essential to the progress of any inquiry into the laws of those forces operating externally to a magnet through space, to commence with a rigid examination of the nature and mode of action of those inductive forces upon which the reciprocal force of attraction between the bodies immediately depends. These forces of induction may be considered as a series of successive or reverberating influences, operating between the near and opposed surfaces of the magnetic bodies. When, for example, a magnet is opposed to a mass of soft iron, a direct impression is first made on the iron by which the iron is rendered temporarily magnetic; this induced force operates in its turn by a